DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER PROTECTION BUREAU
Metcalf Building, Helena, Montana 59620
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ENVIRONMENTAL ASSESSMENT (EA)

Division/Bureau: Permitting & Compliance Division, MPDES Permits;

Project or Application: ASARCO LLC, Mike Horse/Anaconda Mine Water Treatment System.

Description of Project: This is for the reissuance of a wastewater discharge permit issued to ASARCO LLC under the Montana Pollutant Discharge Elimination System (MPDES). Currently, the permittee discharges treated mine drainage from a constructed wetland treatment facility. Discharge from the constructed wetland is continuous to the Black Foot River. The permittee maintains a second outfall (Outfall 001A) to Mike Horse Creek from the Mike Horse Adit pre-treatment system. A discharge from Outfall 001A has not been reported by the permittee. The permittee proposes to upgrade treatment to microfiltration over the next permit cycle. Once the upgraded system is on-line, discharge from Outfall 001A is prohibited (effective June 1, 2012). The Blackfoot River is classified as a B-1 waterbody by the Montana Surface Water Quality Standards.

Benefits and Purpose of Proposal:
Benefits from issuing this permit would ensure treatment of metal-laden and low pH mine drainage. Re-issuance of this permit will allow for continued and additional monitoring during the permit term.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:
None

Listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by this or another government agency:
None

Affected Environment and Effects from the Proposed Project:

Key to Rank	
NA	*Not applicable*
N	*No effects*
B	*Potentially beneficial effects*
A	*Potentially adverse effects*
M	*Corrective action required*
P	*Additional permits will be required*

Rank	Consideration	Remarks
	PHYSICAL AND BIOLOGICAL ENVIRONMENT	
N	1. SOIL SUITABILITY, TOPOGRAPHIC AND/OR GEOLOGIC CONSTRAINTS (soil moisture, unstable soils or geologic conditions, steep slopes, erosion potential, subsidence potential, seismic activity)	The constructed wet-land facility is built adjacent to the Black Foot River. It is built atop quaternary alluvium. Facility has been at this location since 1996.
N	2. HAZARDOUS FACILITIES (power lines, hazardous waste sites, distances from explosive and flammable hazards including chemical/petroleum storage tanks, underground fuel storage tanks and related facilities such as natural gas storage facilities and propane tanks)	The current treatment is benign. Hydrogen peroxide addition is used for pretreatment of the Mike Horse Adit discharge. The constructed wetland does not use mechanical treatment or chemical additions. The proposed treatment upgrade may use "caustic" (chemical addition) to increase the water pH above 10 for manganese (Mn) treatment. The mechanical treatment process

			(microfiltration) will create some sludge that will be dried and final disposal will be in the Pay Master waste repository, located less than two miles from the treatment facility. Caustic chemical addition will create a higher volume of sludge than other Mn removal techniques – specifically hydrogen peroxide addition or aeration. The requirement to treat Mn to low levels in the effluent is necessary to protect aquatic life.
N	3.	AIR QUALITY (effects to or from project, dust, odors, emissions)	Metallic odors may be detectable near the Mike Horse adit and pretreatment pond. However, final treatment will remove most metals from the discharged water and an odor is not anticipated. The present treatment system and the proposed treatment system do not require processes that create exhaust.
N	4.	GROUNDWATER RESOURCES & AQUIFERS (quality/nondegradation, quantity/reliability, distribution, uses/rights, number of aquifers, mixing zones)	Wells in the area are sparse. The Montana Ground Water Information Center (GWIC) have logs for three wells drilled near Mike Horse Creek's mouth (near upper Blackfoot River) show wells (monitoring) that are completed in fractured bedrock. The bedrock is overlain by soil and/or unconsolidated sediments. Static water level is around 15-20 feet below the ground surface. Aquifer names and water quality were not available for these wells.
N	5.	SURFACE WATER RESOURCES (quality/nondegradation, quantity/reliability, distribution, uses/rights, storm water controls, source of community supply, community treatment, mixing zones)	Discharges are regulated by limits established in the permit. Water Quality Based Effluent Limitations are calculated and implemented to protect the receiving water quality.
N	6.	VEGETATION AND WILDLIFE SPECIES AND HABITATS, INCLUDING FISHERIES AND AQUATIC RESOURCES (threatened, endangered, sensitive species, prime habitat, population stability, potential for human wildlife conflicts, effectiveness of post-disturbance plans)	This area has been long impacted by human activities specific to hard-rock mining. Mining began in the Upper Blackfoot Mining district in the late 1880's and continued through the 1950's. The receiving waters, Blackfoot River and Mike Horse Creek, are 303(d) listed as not supporting aquatic life or a cold-water fishery due to metal contamination and low pH. The present and proposed treatment offer removal of toxic metals prior to discharge.
N	7.	UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES (biologic, topographic, wetlands (within one mile), floodplains (within one mile), scenic rivers, natural resource areas, etc.)	No additional impacts to the environment will occur because the facility has long been established at the site.
N	8.	LAND USE (waste disposal, agricultural lands [grazing, cropland, forest lands, prime farmland], recreational lands [waterways, parks, playgrounds, open space, federal lands), access, commercial and industrial facilities [production & activity, growth or decline], growth, land-use change, development activity)	No changes in land use at the permitted facility will occur during the permit cycle.
N	9.	HISTORICAL, CULTURAL, & ARCHEOLOGICAL (sites, facilities, uniqueness, diversity)	Most of the historic buildings near the treatment facilities that date from the mining days have been removed or are dilapidated. No activities during this permit cycle are proposed that will impact what historical buildings are present.
N	10.	AESTHETICS (visual quality, nuisances, odors, noise)	The existing facility is low-profile; the pretreatment ponds for the Mike Horse adit water are not visible from Forest Service property. The upgraded facility will have a building. The USFS has requested that its aesthetics blend into the forest environment.

N	11.	DEMANDS ON OR CHANGES IN ENVIRONMENTAL RESOURCES INCLUDING LAND, WATER, AIR, OR ENERGY USE (need for new or upgraded energy sources, potential for recycling, etc.) {See (4), (5), and (8).}	A power line was installed in 2007 for the upgraded mechanical treatment (micro-filtration) facility. It was buried except in areas where it crossed the Blackfoot River. The proposed upgraded facility is expected to offer significant treatment and vast improvements to the receiving water are anticipated. A viable fish population may find its way to improved water quality.

Rank	Consideration		Remarks
IMPACTS ON THE HUMAN POPULATION			
NA	12.	CHANGES IN DEMOGRAPHIC CHARACTERISTICS (population quantity, distribution and density, rate of change)	No impacts are expected.
N	13.	GENERAL HOUSING CONDITIONS (quality, quantity and affordability)	No impacts are expected.
NA	14.	POTENTIAL FOR DISPLACEMENT OR RELOCATION OF BUSINESS OR RESIDENTS	None
N	15.	PUBLIC HEALTH AND SAFETY (medical services and facilities, police, fire protection and hazards [see (2)], emergency medical services [see (8), LAND USE for waste disposal])	Public health and safety will be improved by treating the mine drainage prior to discharge.
N	16.	LOCAL EMPLOYMENT AND INCOME PATTERNS (quantity and distribution of employment, economic impact)	No changes to employment or income patterns are expected.
NA	17.	LOCAL AND STATE TAX BASE AND REVENUES	If, due to permit conditions, the facility fails to provide the level of treatment to prevent pollutants from being discharged to state waters, the company may have invest or raise capital to cover improvement and construction costs.
NA	18.	EFFECTS ON SOCIAL STRUCTURES AND MORES (social conventions/standards of social conduct), DEMANDS ON SOCIAL SERVICES (law enforcement, educational facilities [libraries, schools, colleges, universities], welfare, etc.)	No impacts are expected at this time.
NA	19.	TRANSPORTATION NETWORK (condition and use of roads, traffic flow conflicts, rail, airport compatibility, etc.)	No impacts are expected at this time.
N	20.	CONSISTENCY WITH LOCAL ORDINANCES, RESOLUTIONS, OR PLANS (conformance with local comprehensive plans, zoning or capital improvement plans)	No impacts are expected at this time.

N	21.	REGULATORY RESTRICTIONS ON PRIVATE PROPERTY RIGHTS (*Are we regulating pursuant to a police power? Does the Agency action restrict the use of the property beyond the minimum necessary to achieve compliance with the Act? What are the costs of such additional restrictions resulting from proposed permit conditions? Are there other, less restrictive ways of achieving the same goal?* See your assigned legal counsel for assistance preparing this section. [See the Private Property Assessment Act checklist accompanying this permit for details.]	The limits set within the permit do not impose unnecessary demands on the Permittee at this time. Issuance of the permit will not affect private property.

Other groups or governmental agencies contacted or which may have overlapping jurisdiction:

None

Public Involvement:

Thirty-day public comment period, beginning May 5, 2008

Individuals or groups contributing to this EA:

State of Montana, DEQ Permitting & Compliance Division

Summary of Issues:

See Statement of Basis

Summary of Potential Effects:

See Statement of Basis

Cumulative Effects:

None

Recommendation:

Grant the Surface Water Discharge permit

Recommendation for Further Environmental Analysis:

☐ Prepare an EIS ☐ Prepare a more detailed EA ☒ No further analysis

EA prepared by: Rebecca Ridenour Date: April 2008

Bureau Check-off

AWMB _____ CSB _____ EMB _____
IEMB _____ WPB _____ Other _____

Approved by:

Jenny Chambers, Chief
Water Protection Bureau

_____ _____
(Signature) (Date)